

**AMENDMENTS TO THE SPECIFICATION:**

Please amend the specification as follows:

Please replace paragraph [001] with the following:

[001] This application claims priority of U.S. Provisional Application No. 60/451,054 filed February 28, 2003, which is hereby incorporated by reference in its entirety. Further, this application is related to U.S. Patent Application No. \_\_\_\_\_ (~~Attorney Docket No. 06502.0565-00000~~) 10/787,217, entitled "SYSTEMS AND METHODS FOR PROVIDING A STORAGE VIRTUALIZATION ENVIRONMENT," and filed concurrently herewith, U.S. Patent Application No. \_\_\_\_\_ (~~Attorney Docket No. 06502.0569-00000~~) 10/787,322, entitled "SYSTEMS AND METHODS FOR DYNAMICALLY UPDATING A VIRTUAL VOLUME IN A STORAGE VIRTUALIZATION ENVIRONMENT," and filed concurrently herewith, U.S. Patent Application No. \_\_\_\_\_ (~~Attorney Docket No. 06502.0570-00000~~) 10/787,321, entitled "SYSTEMS AND METHODS FOR PERFORMING QUIESCENCE IN A STORAGE VIRTUALIZATION ENVIRONMENT," and filed concurrently herewith, U.S. Patent Application No. \_\_\_\_\_ (~~Attorney Docket No. 06502.0571-00000~~) 10/787,324, entitled "SYSTEMS AND METHODS FOR CONFIGURING A STORAGE VIRTUALIZATION ENVIRONMENT," and filed concurrently herewith, and U.S. Patent Application No. \_\_\_\_\_ (~~Attorney Docket No. 06502.0572-00000~~) 10/787,323, entitled "SYSTEMS AND METHODS FOR PROVIDING A MULTI-PATH NETWORK SWITCH SYSTEM," and filed concurrently herewith, and all of which are hereby incorporated by reference in their entirety.

Please insert the following sentence at the conclusion of paragraph [156]:

The overall snapshot of the virtual volume may then be distributed across more than one processor in the virtualization layer.

Please replace the summary section beginning at paragraph [007] with the following:

[007] Methods and systems consistent with certain embodiments of the present invention provide a solution that improves the scalability, security, availability, and/or manageability of storage systems. These methods and systems can utilize a single storage switch and allow resource sharing while securely separating customer data. A snapshot capability may be provided to capture a point-in-time image of the stored data and to track changes made to the stored data relative to a point-in-time image.

According to one embodiment, a method for creating a snapshot of a virtual volume containing stored data comprises identifying a source virtual volume containing stored data, comprising a plurality of wherein the source volume is a virtual volume comprising objects defining a mapping to data in at least one storage device, and wherein the objects are distributed across more than one processor in a virtualization layer between at least one host and the at least one storage device. A set of partition snapshots of the source volume is generated created, with one partition snapshot for each of the objects, wherein each of the partition snapshots comprises as a point-in-time copy of the different portion of the virtual volume corresponding to the one of the objects containing state information about a state of the source volume when the snapshot is generated and distributed across the more than one processor in the

virtualization layer and generating an overall snapshot of the virtual volume from the set of partition snapshots.

In another embodiment of the present invention, a method for creating a snapshot of a virtual volume containing stored data comprises identifying a source-virtual volume containing stored data, wherein the source volume is a virtual volume comprising a plurality of objects defining a mapping to data in at least one storage device, and wherein the objects are distributed across more than one processor in a virtualization layer between at least one host and the at least one storage device, creating a set of partition snapshots for the plurality of objects. One partition snapshot is created for each of the objects, and each of the partition snapshots comprises a point in time copy of the different portion of the virtual volume corresponding to the one of the objects. The method further includes specifying, for each of the partition snapshots, a change log volume corresponding to the source-different portion of the virtual volume corresponding to the object for the partition snapshot. An overall snapshot of the source volume is generated that is a point in time copy containing state information about a state of the source volume when the snapshot is generated from the set of partition snapshots, and changes made to the source corresponding portion of the virtual volume after the overall snapshot is generated are stored in the change log volume.

In yet another embodiment, a system for creating a snapshot of a virtual volume comprises a plurality of storage devices storing data corresponding to a host and a means for providing a virtualization layer between the host and the plurality of storage devices, the virtualization layer comprising a plurality of objects defining a mapping to

data in the plurality of storage devices, wherein each one of the objects corresponds to a different portion of the virtual volume, and the objects are distributed across the more than one processor in the virtualization layer. The system further comprises a means for providing a snapshot layer between the host and the virtualization layer, the snapshot layer comprising an intermediate partition snapshot of each object in the virtualization layer, wherein the partition snapshot for each object comprises a point-in-time copy of the different portion of the virtual volume corresponding to one of the plurality of objects in the virtualization layer. ~~the~~ The intermediate snapshot ~~having~~ has references to (1) the one of the plurality of objects in the virtualization layer, (2) an ~~intermediate-COW~~ point-in-time copy of the ~~object~~ different portion of the virtual volume, and (3) a change log corresponding to ~~the intermediate point-in-time copy portion of the virtual volume~~, and an overall snapshot object ~~containing a reference to of the virtual volume comprising references to each intermediate partition snapshot corresponding to objects comprising the virtual volume.~~

In ~~s~~ still another embodiment of the present invention, a system for creating a snapshot of a virtual volume comprises a means for identifying a ~~source virtual volume containing stored data, wherein the source volume is a~~ virtual volume comprising a plurality of objects defining a mapping to data in at least one storage device, wherein each one of the objects corresponds to a different portion of the virtual volume, and wherein the objects are distributed across more than one processor in a virtualization layer between at least one host and the at least one storage device. The system further comprises a means for generating a set of partition snapshots of the source volume ~~that is a point-in-time copy containing state information about a state of the source volume~~

when the snapshot is generated for the plurality of objects, wherein each of the partition snapshots comprises a point in time copy of the different portion of the virtual volume corresponding to one of the objects. The system further comprises and a means for distributing the generating an overall snapshot of the source virtual volume across the more than one processor in the virtualization layer from the set of partition snapshots.

An additional embodiment of the present invention includes a tangibly-embodied computer-readable medium containing code for directing a processor to perform a method for creating a copy of stored data. The method comprises identifying a source virtual volume containing stored data, wherein the source volume is a virtual volume comprising a plurality of objects defining a mapping to data in at least one storage device, and wherein each one of the objects corresponds to a different portion of the virtual volume, and wherein the objects are distributed across more than one processor in a virtualization layer between at least one host and the at least one storage device. The method further comprises and generating a snapshot of the source volume that is a point-in-time copy containing state information about a state of the source volume when the snapshot is generated creating a set of partition snapshots for the plurality of objects, with one partition snapshot for each of the objects, wherein each of the partition snapshots comprises a point-in-time copy of the different portion of the virtual volume corresponding to the one of the objects. The method further comprises distributing generating an the overall snapshot of the source virtual volume across the more than one processor in the virtualization layer from the set of partition snapshots.

Additional features and embodiments of the invention are set forth in part in the following description.